

STRATUS 2024 Conference General Program Agenda

Registration includes the full conference package presented in the following table.

Details of technical sessions will be available soon.

	Day 1: Monday May 20	Day 2: Tuesday May 21	Day 3: Wednesday May 22
8:00-8:30	Registration & Breakfast	Registration & Breakfast	Registration & Breakfast
8:30-9:00	Welcome, Opening Remarks Conference General Chairs: Dr. Bahram Salehi, SUNY-ESF Dr. Emmett Ientilucci, RIT SUNY-ESF President: Joanie Mahoney	Welcome, Opening Conference General Chairs: Dr. Bahram Salehi, SUNY-ESF Dr. Emmett Ientilucci, RIT SUNY-ESF Provost: Dr. Sam Mukasa	Welcome, Opening Conference General Chairs: Dr. Bahram Salehi, SUNY-ESF Dr. Emmett Ientilucci, RIT SUNY-ESF VP Research: Dr. John Stella
9:00-9:30	Keynote-1: Ken Stewart President and Chief Executive Officer, NUAIR <i>"Progress in UAS and Aviation in Central New York: An Enhancement to Airspace Integration"</i>	Keynote-2: Dr. Steven Thomson National Program Leader, USDA National Institute Food and Agriculture (NIFA) <i>"Funding for Unmanned Systems Research and Related Technologies in Agriculture at the USDA-NIFA"</i>	Keynote-3: Dr. Qassim Abdullah Vice President and Chief Scientist Woolpert, Inc. <i>"Drones Use in United States of America and Market Dynamics"</i>
9:30-10:50	Technical Session A: (4 talks) UAV for Forest Applications	Technical Session E: (4 talks) UAV rules and regulation, Educations, and more	Technical Session H: (4 talks) UAV Hardware and Software Developments
10:50-11:20	Coffee Break/Exhibit Hall	Coffee Break/Exhibit Hall	Coffee Break/Exhibit Hall
11:20-12:20	Technical Session B: (3 talks) Hyperspectral & Energy Applications	Workshop and Demo 1 by Telops: <i>Indoor Gas Detection and Identification with Telops Hyperspectral Mini xLW System</i>	Technical Session I: (3 talks) UAV for Civil and Infrastructure Monitoring
12:20-1:30	Lunch/Group Photo/ Networking/ Exhibit Hall	Lunch/Group Photo/ Networking/ Exhibit Hall Workshop and Demo 2 by Spectral Evolution: <i>Intro to field reflectance spectroscopy and Demonstration of dual field of view spectroradiometer systems</i>	Lunch/Group Photo/ Networking/ Exhibit Hall
1:30-2:00	<i>Exhibit Hall and Meet Vendors</i>	<i>Exhibit Hall and Meet Vendors</i>	UAV Trivia Game-2
2:00-3:20	Technical Session C: (4 talks) UAV for Agricultural Applications- I	Technical Session F: (7 posters) Poster Presentations	Technical Session J: (4 talks) UAV for Agricultural Applications- II
3:20-3:50	Coffee Break/Exhibit Hall	Coffee Break/Exhibit Hall	Awards and Closing Remarks Conference General Chairs: Dr. Bahram Salehi, SUNY-ESF Dr. Emmett Ientilucci, RIT Student Poster and Presentations and UAV Trivia Winners
3:50-5:10	Technical Session D: (4 talks) UAV for Water & Flood Monitoring	Technical Session G: (4 talks) UAV for Transportation and Construction	
5:10-5:30	Wrap Up of the Day	UAV Trivia Game-1	
5:30-7:00		Happy Hours/Social At Collegian Hotel and Suites, Syracuse	

Monday 20 May

REGISTRATION & BREAKFAST: 8:00 AM to 8:30 AM

WELCOME: 8:30 AM TO 9:00 AM

Dr. Bahram Salehi, ESF, Conference General Chair
Dr. Emmett Lentilucci, RIT, Conference General Chair
Joanne Mahoney, ESF President

KEYNOTE: 9:00 AM TO 9:30 AM

Moderator: Dr. Bahram Salehi, ESF

Ken Stewart,

President and Chief Executive Officer, NUAIR

[Progress in UAS and Aviation in Central New York: An Enhancement to Airspace Integration](#)

SESSION A: 9:30 to 10:50 (4 talks)

UAV for Forest Applications

Session Chair: TBD

9:30 **Advancement in NIR Reflectance measurements of small leaves and pine needles and analysis of differing spectral resolution**, Nicolas Venjean and Mckenzie Woodman, Spectral Evolution Inc.

9:50 **Enhanced Individual Tree Detection in Forested Areas using YOLO-based Object Detection on UAV LiDAR Data**, Sina Jarahizadeh and Bahram Salehi, SUNY ESF.

10:10 **Modelling Forest productivity using UAS-derived canopy structural complexity metrics**, Tahrir Siddiqui, Brandon Alvshere, Christopher Gough and Jan van Aardt, RIT; Virginia Commonwealth University.

10:30 **Detection and Delineation of Regenerating Conifer Crowns using UAV Imagery and Mask-RCNN Deep Learning Model**, Abishek Poudel and Eddie Bevilacqua, SUNY ESF.

Coffee Break and Exhibit Hall: 10:50-11:20

SESSION B: 11:20 to 12:20 (3 talks)

Hyperspectral & Energy Applications

Session Chair: TBD

11:20 **Air6 Systems Drone Solar - DrSOLAR**, Alex Fraess-Ehrfeld and Keagan Schiff, AIR6 SYSTEMS.

11:40 **Effects of Calibration on Spectral Classification of Hyperspectral Imagery**, Carson Roberts, Headwall Photonics, Inc.

12:00 **Hyperspectral Multisensor Payload for UAS-based Mapping in Mining and Beyond**, Hyperspectral Multisensor Payload for UAS-based Mapping in Mining and Beyond, HySpex.

Lunch/Group Photo/ Networking/ Exhibit Hall: 12:20 PM to 1:30 PM

Exhibit Hall and Meet Vendors: 1:30 PM to 2:00 PM

Moderator: Emmett Lentilucci, RIT

SESSION C: 2:00 to 3:20 (4 talks)

UAV for Agricultural Applications- I

Session Chair: TBD

2:00 **Aboveground biomass density modeling using UAS/ALS simulated GEDI waveform LiDAR in Western Amazonia**, Nadeem Fareed and Izaya Numata, South Dakota State University.

2:20 **Detecting Spatial Variation in Wild Blueberry Water Stress using UAV-Borne Thermal Sensor**, Kallol Barai, Parinaz Rahimzadeh-Bajgiran and Yongjiang Zhang; University of Maine.

2:40 **Assessing Water Scarcity in Agricultural Landscapes: Leveraging Spectral Indices from Remote Sensing Data in Jefferson Parish, Louisiana**, Esi Dadzie, Jeff Dacosta Osei, Dorcas Twumwaa Gyan, Yaw A. Twumasi and Zhu Ning, Southern University and A&M College, Department of Urban Forestry, Environment and Natural Resources.

3:00 **Detecting Nitrogen deficiency and Potato Leafhopper (Hemiptera: Cicadellidae) infestation in green beans using multispectral imagery from unmanned aerial vehicle**, Detecting Nitrogen deficiency and Potato Leafhopper (Hemiptera: Cicadellidae) infestation in green beans using multispectral imagery from unmanned aerial vehicle, University of Connecticut.

Coffee Break and Exhibit Hall: 3:20 to 3:50

SESSION D: 3:50-5:10 (4 talks)

UAV for Water & Flood Monitoring

Session Chair: TBD

3:50 **A Database of Environmental Bacterial Flora for Remote Sensing Applications**, Jacob Alberti, Gianna Raqueño, Nina Raqueño, Raunak Al-Rubayie, Maryann Herman and Fernando Ontiveros, St. John Fisher University; University of Rochester; RIT.

4:10 **KAMERA: A Multi-camera, Multi-modal Open Source Platform for Aerial Wildlife Surveillance Above the Arctic Circle**, Adam Romlein, Erin Moreland and Keith Fieldhouse, Kitware, Inc.; NOAA.

4:30 **Assessment of structural differences in a Mediterranean ecosystem using UAS-based structure-from motion (SfM) data**, Ramesh Bhatta, Rob Chancia, Glenn Moncrieff, Jasper Slingsby and Jan Van Aardt, RIT; The Nature Conservancy; University of Cape Town.

4:50 **UAS-Based Analysis of Runoff Dynamics: Informing Settlement Resilience to Flood Hazards at the Mallam Junction in Ghana**, Jeff Dacosta Osei, Eric Olenya Lartey, Dorcas Twumwaa Gyan, Esi Dadzie, Yaw A Twumasi and Zhu Ning, Southern University and A&M College, Department of Urban Forestry, Environment and Natural Resources.

Wrap Up of the Day: 5:10 PM

Tuesday 21 May

REGISTRATION & BREAKFAST: 8:00 AM to 8:30 AM

WELCOME: 8:30 AM TO 9:00 AM

Dr. Bahram Salehi, ESF, Conference General Chair
Dr. Emmett Lentilucci, RIT, Conference Co-Chair
Dr. Sam Mukasa, ESF Provost

KEYNOTE: 9:00 AM TO 9:30 AM

Moderator: Dr. Bahram Salehi, ESF

Dr. Steven Thomson,

National Program Leader, USDA National Institute Food and Agriculture (NIFA)

[Funding for Unmanned Systems Research and Related Technologies in Agriculture at the USDA-NIFA](#)

SESSION E: 9:30 to 10:50 (4 talks)

[UAV rules and regulation, Educations, and more](#)

Session Chair: TBD

9:30 **TM-62M landmine detection using an affordable UAV-based differential magnetometer system**, Xander Fries, Ivan Dudiak, Lillian Vernoooy, Sorin Jayaweera, Carlos Ojeda de Silva, Tjaard van Löben Sels, Dominick Quaye, Jason Gallicchio and Alex Nikulin, Harvey Mudd College; SUNY Binghamton.

9:50 **Remote Sensing Course at a Small Liberal Arts College**, Ileana Dumitriu and John Halfman, Hobart and William Smith Colleges.

10:10 **Development and Implementation of a UAS Certificate Program at Vaughn College of Aeronautics and Technology**, Ghania Benbelkacem

10:30 **Flight Rulebook: Comprehending FAA Regulations for UAS**, Taylor Elia Aviation Safety Inspector (Avionics) FAA and Janet Porter Aviation Safety Inspector (Operations) FAA, FAA.

Coffee Break and Exhibit Hall: 10:50-11:20

Workshop and Demo 1 by Telops: 11:20 to 12:20

Indoor Gas Detection and Identification with Telops Hyperspectral Mini xLW System

Lunch/Group Photo/ Networking/ Exhibit Hall: 12:20 PM to 1:30 PM
Workshop and Demo 2 by Spectral Evolution:

Intro to field reflectance spectroscopy and Demonstration of dual field of view spectroradiometer systems

Exhibit Hall and Meet Vendors: 1:30 PM to 2:00 PM

Moderator: Emmett Lentilucci, RIT

SESSION F: 2:00 to 3:20 (7 posters)

[Poster Presentations](#)

Session Chair: TBD

Comparative Analysis of UAV Mounted Multi-sensor and Satellite for Sustainable Agriculture Applications, Haridwar, Uttarakhand, India, Sahil Bhakal, Akshay Pandey, Kamal Jain and Rahul Ratnam, Panjab University Chandigarh; Indian Institute of Technology Roorkee.

Addressing the Dynamic Nature of Scatterable Mines: A Hyperspectral and Machine Learning Framework, Sharifa Karwandyar and Alex Nikulin, SUNY Binghamton.

Low-Cost Environmental Monitoring Applications in Homeland Security, Eric Best and Radhakrishnan Venkatakrishnan, University at Albany.

Leveraging UAVs for Conservation Planning in Vermont, Will Ebby, Luc Burnier and Shannon Harty, Vermont Association Conservation Districts (VACD).

Successful Integration of UAV Aeromagnetic Mapping with Terrestrial Methane Emissions Surveys in Orphaned Well Remediation, Timothy de Smet, Alex Nikulin, Nicholas Balrup and Nathan Graber, "Aletair LLC; SUNY Binghamton; Atlas Technical Consultants; NYS DEC".

A Comparison of Supervised Classification of UAS and Satellite Imagery for Land Cover in Coronado National Memorial, Arizona, Christopher Badurek and Mcguire Craig, SUNY Cortland.

Automated Thermal Anomaly Detection through Deep Learning-based Semantic Segmentation of Building Envelope Images, Shayan Mirzabeigi, Paul Crovella and Mohamad Razkenari, SUNY ESF.

Coffee Break and Exhibit Hall: 3:20 to 3:50

SESSION G: 3:50-5:10 (4 talks)

[UAV for Transportation and Construction](#)

Session Chair: TBD

3:50 **UAS for Transportation Incident Management**, William Howard, Pennsylvania Turnpike Commission.

4:10 **Construction Progress Monitoring and Visualization Using Unmanned Aerial Systems (UAS), Building Information Modeling (BIM), & Computer Vision (CV)**, Reihaneh Samsami, Sonica Karki, Amlan Mukherjee and Colin Brooks, Western New England University; University of New Haven; WAP Sustainability; Michigan Tech Research Institute.

4:30 **Automated Bridge Inspection Using UAS Collected Data: A Machine Learning Approach**, Reihaneh Samsami, Rojal Pokhrel, Saida Elmi and Colin Brooks, Assistant Professor at Western New England University; University of New Haven; Michigan Tech Research Institute.

4:50: **Assessing the Effectiveness and Practical Utility of UAV-based Aerial GPR Surveys in Humanitarian Mine Action**, Alex Nikulin, Gabriel Chen, Jasper Baur, Gabriel Steinberg and Timothy de Smet, SUNY Binghamton; Columbia University; Safe Pro AI; Aletair Geophysics and Remote Sensing.

UAV Trivia Game-5:10- 5:30 PM

Moderated by Dr. Peter Spacher

Social Gathering and Happy Hours: 5:30 to 7:30

Collegian Hotel and Suites, Syracuse
Finger foods and one free drink
19 min walk from the venue

Wednesday 22 May

REGISTRATION & BREAKFAST: 8:00 AM to 8:30 AM

WELCOME: 8:30 AM TO 9:00 AM

Dr. Bahram Salehi, ESF, Conference General Chair
Dr. Emmett Lentilucci, RIT, Conference Co-Chair
Dr. John Stella, ESF VP Research

KEYNOTE: 9:00 AM TO 9:30 AM

Moderator: Dr. Bahram Salehi, ESF

Dr. Qassim Abdullah,

Vice President and Chief Scientist
Woolpert, Inc

Drones Use in United States of America and Market Dynamics

SESSION H: 9:30 to 10:50 (4 talks)

UAV Hardware and Software Developments

Session Chair: TBD

9:30 **Low-Cost Collision Avoidance for Unmanned Aerial Vehicle Delivery Networks in Microverse**, Qian Qu, Yu Chen, Erik Blasch and Erika Ardiles-Cruz, SUNY Binghamton; AFOSR; AFRL.

9:50 **Developing an Open-Source Object Counting Workflow for Aerial Imagery**, Corey Snipes and Sarah Dalrymple, Twomile Heavy Industries, Inc.; Royal Society for the Protection of Birds (RSPB).

10:10 **Optimizing April Tag Detection Algorithms for UAV Real-Time Pose Estimation in GPS-Denied Environments**, Daniel Kaputa and Pranav Natekar, RIT.

10:30 **An Automated In-situ LiDAR System Calibration and Trajectory Enhancement Strategy for UAS Mapping of Seed Breeding Trials**, Raja Manish and Ayman Habib, Purdue University.

Coffee Break and Exhibit Hall: 10:50-11:20

SESSION I: 11:20 to 12:20 (3 talks)

UAV for Civil and Infrastructure Monitoring

Session Chair: TBD

11:20 **Applications of UAV for the evaluation of civil infrastructure and urban planning**, Bhagawat Rimal, Uttam Pudasaini and Upendra Oli, Nepal, Tribhuvan University, Kathmandu; Nepal flying Labs; NAXA Pvt.

11:40 **A versatile data collection system for non-imaging UAV data collection**, Robert Kremens, Emmett Lentilucci and Martin Held, RIT; Austin Powder, Inc..

12:00 **Contrasting flight parameter Influences on vertical height measurements in photogrammetric products**, Spencer Roy and Carter Kelly, United States Military Academy.

Lunch/Group Photo/ Networking/ Exhibit Hall: 12:20 PM to 1:30 PM

UAV Trivia Game-2: 1:30 PM to 2:00 PM

Moderator by Dr. Peter Spache

SESSION J: 2:00 to 3:20 (4 talks)

UAV for Agricultural Applications- II

 Session Chair: TBD

2:00 **A comparison of VNIR range sensors for assessing canopy variability in vineyards**, Robert Chancia, Tim Bauch, Nina Raqueno, Terry Bates and Jan van Aardt, RIT; Cornell University.

2:20 **Agricultural Disease Management: Estimation of Cercospora Leaf Spot severity in Table Beets using UAS**, Mohammad S Saif, Robert Chancia, Pratibha Sharma, Sean Murphy, Sarah Jane Pethybridge and Jan van Aardt, RIT; Cornell University.

2:40 **Leveraging Remote Sensing Technologies for Precision Agriculture: A Pathway to Achieving Sustainable Food Security in East Baton Rouge**, Dorcas Twumwaa Gyan, Jeff Dacosta Osei, Esi Dadzie, Yaw A Twumasi and Zhu Ning, Southern University and A&M College, Department of Urban Forestry, Environment and Natural Resources.

3:00 **Revolutionizing RPAS Logistics: An Innovative Multi-Objective Hybrid Optimization Framework Utilizing the SORA Methodology for Advanced Delivery Systems**, Revolutionizing RPAS Logistics: An Innovative Multi-Objective Hybrid Optimization Framework Utilizing the SORA Methodology for Advanced Delivery Systems, Carleton University.

Awards and Closing Remarks: 3:20 to 5:10

- Student Oral Presentation
- Student Poster Presentation
- Trivia- 1winner
- Trivia-2 winner

Closing Remarks: 4:15 to 4:45

Dr. Bahram Salehi, ESF, Conference General Chair
Dr. Emmett Lentilucci, RIT, Conference Co-Chair